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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, WA 98101

August 14, 2006 DRAFT

EPA Region 10
Deemed Releasable

Reply to
Attn Of: ECL-117

MEMORANDUM

SUBJECT: Exit Strategy for Midway Landfill

FROM: Judi Schwarz
Former Acting Site Manager

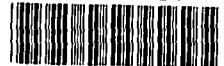
Ted Yackulic
Site Attorney

TO: Dave Croxton
Unit Manager

This memorandum transmits the current version of the Exit Strategy for this site. Because of the many changes in this Exit Strategy for the site, this is a complete Exit Strategy rather than just an update.

Site:	Midway Landfill
Type of Site:	Closed Municipal Landfill, State Enforcement Lead, PRP Financed
Operable Unit(s):	One OU
ID Number:	WAD 980638910
Location:	Kent, Washington
Owner/Operator:	City of Seattle
Principle PRPs:	1, City of Seattle
NPL List:	May 1986
ROD Date:	September 2000
Consent Decree:	May 1990 (under state law); amended February 2006
PCOR Date:	September 2000
Remedial Action Report:	none
2 nd 5-Year Review:	Scheduled for September 2010
SCAP "Targets"	2010 - second 5-Year Review; 2011 - possible NPL deletion

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ACTIONS NEEDED TO DELIST

The containment remedy constructed as an early remedial action in the early 1990's has been successful in remediating the site. However, the following actions or events must be completed and documented before EPA can consider taking the Midway Landfill site off the NPL.

1. Groundwater down-gradient of the landfill needs to meet the cleanup levels established in the 2000 ROD, or, in the case of vinyl chloride, as slightly modified by Ecology. Cleanup levels have been established for three contaminants: 1,2-dichloroethane [5 ug/L]; vinyl chloride [in the ROD -PQL based 0.2 ug/L, now 0.29 ug/L (see 2005 five year review)]; and manganese [2.2mg/L]. If other contaminants resulting from releases from the landfill are found in any down gradient monitoring well, cleanup levels, if necessary, will need to be established for these additional contaminants using the federal drinking water standards and MTCA.

The point of compliance for the groundwater is at the edge of the landfill waste as specified in a Compliance Monitoring Plan to be approved by Ecology. All groundwater down gradient of this point of compliance will need to meet these cleanup levels for contaminants resulting from releases from the landfill before the Midway Landfill is removed from the Superfund National Priorities List.

As of the five year review, three down gradient wells to the east of landfill in the Southern Gravel Aquifer slightly exceeded the ROD cleanup levels. One of these wells is directly adjacent to landfill and the other two are located approximately 600 feet and 1200 feet east of the south-east corner of the landfill. The well closest to the landfill had lower VOC concentrations than the two wells further away. All of these wells met the manganese cleanup level. There is another Southern Gravel Aquifer well adjacent to the landfill on the east side which may be either up gradient or down gradient. (There is a ground water divide in the area of the landfill.) Manganese is roughly two times the ROD cleanup level in this well, but all VOC cleanup levels were met in the 2004 sampling. Vinyl chloride was below the MCL in all down gradient wells sampled and 1,2-dichloroethane was detected with a maximum concentration of 6.5 ug/l is only slightly above the MCL.

As of September 2005, Ecology concluded that the remedy has been effective in reducing the water within the landfill and that the concentrations of the contaminants of concern have generally remained stable or decreased over the past five years, though levels of some contaminants of concern remain above cleanup levels.

2. The proprietary institutional control requirements established in the ROD have been put in place. These institutional controls include both legal controls (permanent notices regarding the landfill itself in the county real estate records, as well as enforceable assurances that the O&M of the containment and monitoring systems will continue if the ownership or control of the property changes.) The ROD also required an educational IC in the form of annual notices to well-drillers active in the area. The

five year review disclosed that this notice had not been sent regularly in the past, but the problem has probably been remedied as a result of the five year review.

RPM WORKLOAD REQUIREMENTS AND SCHEDULES

This site is completely managed by Ecology. This arrangement was established in a Cooperative agreement between Ecology and EPA. No monitoring data had been routinely submitted to EPA, but we have asked to receive a copy of the annual monitoring report.

The next five year review is due in September 2010. Ecology performed the five year review, consistent with the ROD expectation. EPA will need to remind Ecology of this requirement during the Ecology/EPA work planning meeting for the FY 2010 year.

The site manager should also annually talk to Ecology about the monitoring data trends (such as when preparing annual updates of this exit strategy), the effectiveness of the ICs, and the latest developments on site re-use, and to see if any other issues have arisen.

Ecology is expected to continue to be the lead regulatory agency overseeing the performance of the selected remedial action by the City of Seattle.

BACKGROUND

The Midway Landfill is a closed landfill located in Kent, WA, between Interstate-5 (I-5) and Highway 99. The landfill is approximately 60 acres in size with refuse buried on about 40 acres and at depths over 100 feet. The landfill is now owned by the City of Seattle.

Land use in the landfill vicinity consists primarily of commercial activities and residential areas. Commercial establishments and light industry and manufacturing border both sides of Highway 99 in the area. Most of the nearby residences are detached single-family dwellings, with some multi-unit residential developments to the south and west. Several mobile home parks are also in the vicinity. Municipal water systems serve the area and there are no private wells in use in the area of groundwater contamination from the landfill.

From 1945 to 1966, the site of the current Midway Landfill was operated as a gravel pit. In 1966, the City of Seattle leased the site and began using it as a landfill. From 1966 to 1983, approximately three million cubic yards of solid waste were deposited there.

When the City closed the landfill in the fall of 1983, it began extensive testing of water and gas in the landfill and its vicinity. This sampling disclosed the presence of organic and inorganic contaminants outside the landfill boundary. Beginning in September 1985, the City of Seattle constructed gas migration control wells within the landfill property and gas extraction wells beyond the landfill property to control the subsurface migration of gas. Gas was found to have migrated up to 2600 feet beyond the landfill prior to installation of the gas extraction system.

In September 1988, the City of Seattle agreed to prepare an RI/FS under a Response Order on Consent with Ecology. In May 1990, prior to completion of the RI/FS, the City and Ecology entered into a consent decree pursuant to State of Washington Model Toxics Control Act (MTCA.) In this consent decree, the City of Seattle agreed to finance and perform the following cleanup work:

- Construction of a multi-layer landfill cover. The landfill cover was designed to greatly reduce the amount of rain that would seep into the landfill and to control the post-closure escape of hazardous emissions from the landfill.
- Completion of a gas extraction, flare, and monitoring system.
- Completion of a surface water management system to prevent surface water from the surrounding area from infiltrating the landfill.
- Preparation of a comprehensive operation and maintenance manual

The consent decree also required the City to place a notice in the county property records.

Because of the remedial work performed by the City of Seattle between 1985 and 2000, environmental conditions had greatly improved prior to EPA's ROD. The City of Seattle completed construction of the landfill cover, landfill gas extraction system, and surface water management system in November 1992. The landfill is fenced and access is limited. A gas extraction system is in place and operating throughout the landfill. Because of these actions, potentially explosive landfill gas does not leave the landfill property and the quality of the groundwater leaving the landfill has greatly improved. A comprehensive operation and maintenance manual for both short-term and long-term operation and maintenance for the systems constructed under the consent decree was prepared by the City of Seattle, and was approved by Ecology in April 1992.

Selected Remedial Actions

The City of Seattle's cleanup work, including the work done in response to the 1990 consent decree between the City and Ecology, had successfully reduced the environmental problems at the landfill. Therefore, the remedy selected in the EPA 2000 ROD incorporated elements required in the 1990 consent decree between City and Ecology, and added some elements to ensure that containment measures already in place are monitored and maintained, and expanded the institutional controls to ensure the long-term protectiveness of the remedy. The selected remedy also sets groundwater cleanup standards, as described above on page 2.

The remedy selected in the 2000 EPA ROD for the Midway Landfill site consists of:

1. Monitoring to ensure the remedial systems are working as designed, and that progress is being made towards meeting the groundwater cleanup standards

2. Continued operation and maintenance of all remedial project elements required in the Ecology/City of Seattle 1990 consent decree, including the gas collection system, the multilayered cap, and the storm water collection system.
3. Implementing institutional controls as described below and in the ROD

Ecology and the City of Seattle anticipated amending the 1990 consent decree within six months after the EPA ROD was signed to reflect these and other remedial issues. The final amendment to the consent decree was signed by Ecology and the city in December 2005 and by the judge in February 2006.

Institutional Controls

The City of Seattle has operational control of the landfill site. The site is fenced and access is controlled.

The remedy selected in the ROD includes three types of institutional controls. Variations of the first two types of institutional controls were already required in the 1990 consent decree.

First, the City of Seattle will place a notice in the records of real property kept by the King County auditor, alerting any future purchaser of the landfill property, in perpetuity, that this property had been used as a landfill and was on EPA's National Priorities List, and that future use of the property is restricted. This is a minor change from the requirements in the 1990 consent decree. This has now been implemented: The signed and notarized Declaration of Restrictive Covenant MTCA Use Restrictions (WAC 173-340-440) was recorded in the county offices on July 13, 2005 and includes all the requirements set forth for this notice in the ROD.

Second, the City needs to ensure continued operation and maintenance of the containment and monitoring systems if any portion of the property is sold, leased, transferred or otherwise conveyed. This requirement is an element of the 1990 consent decree.

Third, notices are needed so that no water supply wells are constructed and used in areas with groundwater contamination emanating from the landfill. These notices shall include at a minimum the following:

The City will annually notify the Seattle-King County Department of Public Health, Ecology, the local water districts (currently, the Kent and Highline Water Districts) and locally active well drillers in writing of groundwater conditions in the affected areas down gradient of the landfill. This notice will include a map showing the location of the affected areas and indicate which aquifers are affected and their elevations. This information shall be updated annually and can be part of an annual groundwater monitoring report. Locally active well drillers are all well drillers that have drilled wells within King County in the year prior to the notice. Ecology will provide the list of locally active well drillers to the City. This requirement for annual notices can be

removed or modified by Ecology after groundwater cleanup standards have been met in the groundwater monitoring wells down gradient from the landfill.

The City of Seattle will also annually notify owner of one particular well (Well #37) in writing of groundwater conditions in the area of the well. Alternatively, the City of Seattle can provide to Ecology adequate assurances that this well has been properly abandoned.

The five year review process disclosed that the city had not sent out any notices to well drillers nor performed related informational ICs required by the ROD. The city sent out the first notices on July 22, 2005 and copies are in the 2005 five year review report.

As an additional protection, state regulations forbid any private drinking water wells within 1,000 feet of a municipal landfill or 100 feet from all other sources or potential sources of contamination (WAC 173-160-171). State regulations (WAC 173-160-151) also requires a property owner, agent of that owner, or a water well operator to notify Ecology of their intent to begin well construction prior to beginning work. This notification can provide notice to Ecology if anyone plans to build a new water well too near Midway Landfill.

O&M ISSUES

Ecology has not alerted EPA to any O&M issues, except for those related to the I-5 widening project (see below). The only active system is the gas collection and destruction system and the city states that this has been operating smoothly.

COMMUNITY RELATIONS

For the past 15 years or so, there has been very little community interest in Midway Landfill. Community interest was very high in the 1980's when potentially explosive levels of methane was found in homes surrounding the landfill. Since that time, the city purchased the affected homes, the landfill gas has been confined to the landfill, and these homes have since been re-sold by the city. There was an extensive mailing to the community announcing EPA's proposed plan in 2000 - and the few questions and comments received from the community related to exactly where the water was or was not contaminated. Ecology did publish a notice announcing that a five year review would be taking place and received no comments. An RPM should expect to continue to receive very occasional questions about the extent of GW contamination near the site. These callers can be referred to Ecology or to the City because they are most familiar with the exact monitoring locations and data.

SITE REUSE/REDEVELOPMENT

Land Use: Currently, the landfill is capped and fenced. No public access is allowed. Future land use has been the subject of an extensive but preliminary 1992 study by community representatives, the City of Kent, and the City of Seattle. Some possible uses considered desirable by the Midway Citizens Advisory Committee include open space uses such as a passive park, a sports complex with ball fields, or garden center. Less

desirable but potentially possible future uses would be a golf driving range or a park and ride facility. All uses would need to be designed to protect the integrity of the cap and other containment systems.

In 2006, the city received a grant (perhaps from EPA?) to investigate possible reuses of the site. The city staff member who called was Sean McDonald, 206 684-7652. We have not heard about the results of the study.

An RPM can expect to receive occasional calls from parties potentially interested in the site - usually for industrial uses not identified by the citizens advisory committee. These caller can be referred to the City and Ecology contacts noted below, because they are most familiar with the cap and what land uses may or may not be compatible with the cap and landfill stability.

The selected remedy does not place any additional limits on future land use at the Midway Landfill site and does not change the feasibility of the possible future uses suggested by the Advisory Committee.

The eastern side of the capped landfill area is being affected by an I-5 expansion project. According to the Ecology site manager, the City of Seattle had signed an agreement with Washington DOT that if DOT ever needed back the land DOT owned, Seattle would remove the garbage that is within their property and would pay all costs. Ecology is part of a three party agreement. I do not know whether or not this work will affect Monitoring Well 14, which is one of the key monitoring wells.

Groundwater uses: To the best of Ecology's and the City's knowledge, no one is drinking the groundwater from any aquifer within almost a mile of the landfill, and there are no current plans to use the groundwater near the landfill for drinking water. The closest wells currently in use for drinking water are the Lake Fenwick wells almost 1 mile southeast of the Midway Landfill.

SPECIAL ISSUES OF INTEREST

1. EPA's role in the Midway Landfill site is somewhat unique. All major construction at the site was completed in the early 1990's, but the site could not be considered "construction complete" until a decision document was completed. While the cleanup has always been managed by Ecology under their state authorities, Ecology was having problems completing a draft CAP because of differences in opinion between the city and Ecology, as well as workload issues. Therefore, with Ecology's support, an EPA CERCLA ROD was eventually prepared and signed in September 2000. Ecology has continued to be the lead regulatory agency after the ROD.

It may be important to remember that the criteria for removing a site from the NPL is different than the criteria for removing a site from Ecology's Sites List and that removing a site from one list does not require removing the site from the other list. A couple of years ago the city was very, very interested in getting Midway off the NPL and may be very helpful and cooperative on this issue in the future.

2. In the 1980's and 1990's, groundwater contamination was discovered to the north and northwest of the landfill. While early site documents suspected that the source of this contamination was Midway Landfill, later geohydrology work demonstrated that this groundwater was up gradient from the landfill and that the landfill is not likely to be the source of this contamination. Because of this issue, the ROD clearly states that: "For the purposes of this ROD and potential future deletion of this site from EPA's National Priorities List, the Midway Landfill "site" is the landfill area containing waste, and all down gradient contaminated groundwater resulting from releases from the landfill. Several potential up gradient groundwater sources have been identified but are not included within the "site" and are not addressed by this ROD."

One of the City's continuing concerns is that the up-gradient contaminated groundwater will never allow the groundwater leaving the landfill to meet the groundwater cleanup standards. The ROD states that if in the future the City wants to demonstrate that it is technically impracticable for them to meet the cleanup standards at every down gradient well because of the up gradient sources, EPA and Ecology will work together with the City to determine what information is needed to support such a demonstration. Because the down gradient well closest to the landfill (MW-14) has had concentrations below the MCLs over the past few years, it seems unlikely that a TI waiver for this issue will be necessary.

Because the up gradient groundwater monitoring wells now contains higher concentrations than the down gradient monitoring wells, Ecology did commit, in the five year review, to investigate and clean up the up gradient sources of VOC contamination, with a milestone date of 2010. They were going to begin by notifying the up gradient property owners by September 2006. We expect to keep an eye on this though Bev's five year review recommendation tracking system.

4. Based on Judi's conversation with Ching-Pi over the years, oversight of this site seems to be a very low priority to Ecology. For example, it appears that Ecology had not been regularly looking at the monitoring data. If we need details on the current status of the clean-up, we are likely to get more information quicker if we directly contact Jeff Neuner at the City of Seattle.

EPA STAFF WITH SOME KNOWLEDGE OF THE SITE

Neil Thompson and Andrea Lindsay were extensively involved in the mid-1980's response to the gas migration into the community. (Andrea was involved prior to working for EPA.) Judi Schwarz was involved in EPA's decision to write a CERCLA ROD in 2000, and wrote the ROD.

CONTACTS

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The city attorney working on this site is Marya Silvernale
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As of December 2005, the state AG was Andy Fitz.

Attachment: Map (Figure 5-3 from the ROD.)